



DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service



TB Notes
No. 2, 2002

Dear Colleague:

As many of you know by now, preliminary TB data for 2001 are available. On March 12, Dr. Marisa Moore of the Surveillance and Epidemiology Branch (SEB) of the Division of TB Elimination (DTBE) forwarded to TB Control Officers and DTBE field staff an e-mail containing provisional 2001 data from the national TB surveillance system. As she reported, these data indicate that, in 2001, a total of 15,991 TB cases were reported from the 50 states and the District of Columbia, representing a decrease of 2% from 2000 and 40% from 1992. The case rate in 2001 was 5.6 per 100,000, and the proportion of cases among foreign-born persons was 50%. The 2001 provisional TB case total was included in the March 22, 2002, *Morbidity and Mortality Weekly Report (MMWR)* "Notice to the Readers" about World TB Day. With this provisional total, the number of U.S. TB cases has now decreased for the ninth straight year. However, the percentage decline in the number of TB cases is less than it has been. Although data from one year do not constitute a trend, this may be the first sign of stagnation in U.S. TB decreases. As we continue to focus on the goal of eliminating TB in the United States, we must keep in mind that achieving that goal will require not only the ability to rapidly increase resources for local TB control efforts when outbreaks occur, but also the will and resources to combat the devastating impact of the global TB epidemic.

For some time DTBE had operated under a continuing resolution. I am pleased to report that Congress has approved a modest increase in funding for TB control activities. After consultation with the National TB Controllers Association (NTCA), NCHSTP leadership, and DTBE senior staff, we decided to use the \$5 million increase in the following ways: to fund all successful competitors in the TB Epidemiologic Studies Consortium; to evaluate the efficacy of once weekly isoniazid and rifapentine for treatment of latent TB infection; to intensify TB prevention and control activities in African-American communities in the Southeast; to provide regional capacity-building in low-incidence areas; to enhance the electronic notification system for state TB control and refugee health; and to support the development of a binational U.S.-Mexico information exchange system. As you will appreciate, these activities are consistent with recommendations in the Institute of Medicine report *Ending Neglect*.

The Data Safety Monitoring Board for the TB Trials Consortium (TBTC) has recommended the termination of Study 23, which had enrolled approximately 180 HIV-positive persons into a single-arm treatment trial for TB disease using intermittent rifibutin. Five participants relapsed; all had rifamycin-resistant TB. A "Notice to the Readers" on the subject

appeared in the *MMWR* that was published on March 15. We have recommended against the use of highly intermittent (i.e., twice weekly) therapy in HIV-infected persons with CD4+ counts less than 100 per microliter.

The 7th Annual Conference of the North American Region of the International Union Against Tuberculosis and Lung Disease convened in Vancouver, British Columbia, Canada, from February 28 until March 2, 2002. This year's theme was "TB Cure for All -- North American Challenges and Contributions." I had the honor of serving as a speaker at the conference, and thus was able to contribute to as well as gain from this outstanding learning and networking opportunity. Several staff members of DTBE had poster presentations at this meeting; as usual, I was proud of the collaborative work reflected in these presentations. Staff of the DTBE Communications and Education Branch featured a display of DTBE educational materials, including the newly-developed tuberculin skin test ruler (please see the article about the ruler in this issue).

From May 17 to 22, 2002, a number of DTBE staff will be attending the 98th International Conference of the American Thoracic Society (ATS). This year's meeting is being held in Atlanta, Georgia. For information, please contact the ATS by mail at 1740 Broadway, New York, NY 10019, by telephone at (212) 315-8780, by e-mail at ats2002@thoracic.org, or at the Web site www.thoracic.org/ic/ic2002.

I hope that many of you are planning to attend the 2002 National TB Controllers Workshop, which is being held this year from June 18 to 19, 2002, in Alexandria, Virginia. This annual workshop is a crucial opportunity to bring together Division of TB Elimination and state and local TB control staff. It is organized and sponsored by the National TB Controllers Association (NTCA) and DTBE. The theme for this year's workshop is "TB Program Evaluation: Keys to Improving Performance." Presentations will focus on gaining a better understanding of different evaluation methods and planning for program adjustments indicated by such evaluations. There will also be two concurrent brown bag sessions on Tuesday, June 18: one session on TB cooperative agreements and the 2003 applications, and one session on revisions to the Report of Verified Case of Tuberculosis (RVCT) form. As you know, the workshop committee has also invited poster abstracts for this 2002 National TB Controllers Workshop. The 2002 workshop will be based on a format similar to that used in the previous workshops. Breakout sessions have been scheduled to allow for more in-depth consideration of the key issues. I would like to remind you that hotel reservations should be made no later than Friday, May 16, 2002. Questions should be directed to Walter Page at NTCA (770-455-0801), or to Sherry Hussain (404-639-8989) or Paul Poppe (404-639-8120) at CDC. We look forward to an outstanding and successful meeting and encourage you to obtain information and register online at the following secure Web site: <http://sec.cdcmeetings.com/tb/>.

Although I mentioned this in the previous issue of *TB Notes*, it bears repeating. The 4th World Congress on Tuberculosis will be held June 3-5 in Washington, DC. This important meeting will be cosponsored by CDC, the National Institutes of Health, and the World Health Organization/Special Programme for Research and Training in Tropical Diseases.

The stated purpose of the Congress is to evaluate the state of the global TB epidemic since the last TB World Congress, which was held in 1992; review the status of TB research; and identify research gaps. The meeting will address fundamental, translational, and operational research topics, and should be of interest to global TB control officials, TB researchers, health systems services researchers, policymakers and funders, as well as infectious disease and pulmonary physicians. The abstracts were due by March 1, and notification of acceptance was to be sent out on or about April 1. For international travelers only, a limited amount of travel support may be available for those presenting posters or "late-breaker" talks. Detailed information regarding the meeting program can be found at the Web site www.niaid.nih.gov/dmid/tuberculosis/tbcongress/.

Following are updates on upcoming publications of interest: the revised ATS/IDSA/CDC TB Treatment Statement will be reviewed in final form in June and published in the fall. In addition, on March 29, Scott McNabb of DTBE's SEB met with editorial staff from the CDC journal *Emerging Infectious Diseases* regarding a September or October special issue that will feature more than 20 manuscripts on TB genotyping.

Kenneth G. Castro, MD

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HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

The “Goldwater Era” Ends in New York

For nearly a decade, Goldwater Memorial Hospital, located on Roosevelt Island in the East River between Manhattan and Queens, served as a long-term detention and treatment facility for a very special population of nonadherent TB patients. These individuals, who were unable or unwilling to complete treatment on their own, were detained in Goldwater's Secure Tuberculosis Treatment Unit by order of the Commissioner of Health. Goldwater's detention ward was a unique facility in the country and the “Goldwater Era,” which began in September 1993, ended in November 2001 when the last patient was discharged.

Approximately 220 patients had been admitted to this facility by the time it closed at the end of 2001. Many of the patients detained at Goldwater had psychological, alcohol, substance abuse, or other problems. The Secure Tuberculosis Treatment Unit functioned as both a medical facility and a therapeutic setting where patients could gain insight into the circumstances that led to their detention. At Goldwater, the patients learned to take

responsibility for their actions and work toward resolving some of their problems. An interdisciplinary staff provided psychosocial, medical, recreational, educational, therapeutic, and substance-abuse services. Although this was not an easy population to work with, the staff felt rewarded when patients demonstrated hidden talents, acquired new skills, and in the process gained self-esteem.

Every month the discharge committee, consisting of both Goldwater and Tuberculosis Control Program Regulatory Affairs Unit staff, met to assess patients for the possibility of early discharge before completion of treatment.

In December 2001, Sonal Munsiff, MD, Director of the New York City TB Control Program, wrote a letter to Laurie Nathan, PhD, Coordinator, and Prem Srivastava, MD, of Goldwater's Secure TB Unit, thanking them for their “creative vision and commitment to public health.” By setting up the Secure TB Unit, Goldwater Hospital had “provided a unique and critical public health service to the City of New York,” Dr. Munsiff wrote. The care received at the Secure TB Unit “made it possible for patients to take up their lives again with improved vocational and social skills.”

Secure TB Unit patients had access to amenities such as telephones, television, exercise

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TB Notes Editor
 CDC/NCHSTP/DTBE, Mail Stop E10
 1600 Clifton Road, NE
 Atlanta, Georgia 30333
 Fax: (404) 639-8960

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 Kenneth G. Castro, MD

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 resources available from DTBE.

equipment, and laundry and kitchen facilities. They were escorted to off-ward activities such as the library, gym, or computer room, and they could receive visitors, including children. Patients had access to dental care, which, according to staff, helped improve many patients' self-esteem. While detained, patients had the opportunity to interact with one another. Some even formed close personal relationships, which sometimes continued after they completed treatment.

The Regulatory Affairs Unit is grateful to

Goldwater — and to the New York City TB Control Program staff — for all the hard work and years of dedication that they invested in making the program work. Having a resource like Goldwater saved the lives of many patients who otherwise would have discontinued treatment, would have continued to present a public health risk, and most likely would have died from TB disease.

The number of previously nonadherent patients needing involuntary hospitalization has steadily declined since the detention unit was instituted. Originally a 28-bed facility, Goldwater's detention unit became a 14-bed facility as the numbers declined, and in the final days housed only one patient. The TB Control Program is now exploring possibilities for an appropriate setting in which to hospitalize small numbers of nonadherent patients as necessary.

—Submitted by Roberto Acevedo,
 Regulatory Affairs Coordinator,
 Ruth Wangerin, *TB Times* Editor, and
 Loretta Bennett, Public Health Advisor,
 New York City TB Control Program

TB in Colorado Jumps 42% in 2001

Colorado reported 138 new cases of active TB in 2001. This represents a 42% increase from the 97 cases reported in 2000 and the third consecutive yearly increase. The last time Colorado reported more cases was in 1979, when there were 168 cases. Colorado, categorized as a low-incidence state, now has a case rate of 3.2 per 100,000 population, which is far above the *Healthy People 2010* objective of #1.0 case per 100,000 population. In 1998, the case rate was at a low of 1.9 per 100,000 population.

The increase in cases in Colorado is occurring throughout the state. Though 70% of the cases were reported from the Denver metropolitan area, 22 of the state's 64 counties reported new cases of TB. Three counties reporting cases this year had not had a case in the past 5 years.

Since 1999, over 50% of the TB cases in Colorado were among persons known to have been born outside the United States. Of the 138 cases reported in 2001, 85 (62%) were in persons born in other countries. Though 35 of these persons were born in Mexico, there have been cases reported in persons born in 25 other countries. In addition, minority groups are overrepresented: 80% of the cases occurred in minority racial or ethnic groups. Of great concern are the 11 cases in children less than 5 years of age. The increase in TB cases is currently being analyzed to determine ways to halt and reverse this trend.

*—Reported by Barbara Stone, MSPH
TB Program,
Colorado Dept of Public Health and Environment*

TB Challenges in Ohio

Introduction

Why are Ohio's TB case rates and numbers of TB cases going up when overall the nation's are going down, and what can be done to reverse the trend? By 1993, the number of TB cases in the nation and the national TB case rate had resumed their steady declines; in 2000 there were 16,377 cases nationally with a case rate of 5.8 per 100,000 population. The good news is that Ohio met the *Healthy People 2000* TB elimination goal, which was to reduce the case rate to less than 3.5 per 100,000 population.

Having met that goal, Ohio is considered a low case rate state for TB morbidity. However, this masks a significant morbidity problem in Ohio. Since 1998, Ohio has seen a steady increase in the numbers of TB cases as well as in the case rates. The overall goal for TB elimination is a case rate of #1 per 1,000,000 population and, to that end, Ohio faces a challenge. The following chart shows the increase:

Reported TB Cases in Ohio							
Yr	95	96	97	98	99	00	01
No	280	301	286	230	317	338	306

Demographically for the year 2001, there was an inordinate burden of disease among the black population. While this group constitutes approximately 11% of the population in Ohio, almost 50% of the TB cases reported in 2001 were in black, non-Hispanic persons. Asian or Pacific Islanders represent 0.02% of the general population but 12% of the reported TB cases. Persons of Hispanic ethnicity, of any race, represent 2% of the general population yet 4% of the reported TB cases in Ohio. TB cases reported in white persons make up 41% of the incidence for 2001 and represent the majority population in Ohio at approximately 87%. Part but not all of the increase in TB cases in the black population can be attributed to TB in foreign-born persons. Significantly, the increase in foreign-born persons parallels the increase in cases since 1998.

Activities Toward TB Elimination

To bring Ohio TB incidence back to the 1998 low point and lower, strategies to achieve TB elimination must be prioritized to best utilize existing resources in the local TB programs.

First, active TB cases must be identified and adequately treated. The national goal for completion of treatment is 90% in ≤ 365 days when the disease-causing organism is not resistant to rifampin. The following table shows Ohio's performance for the past 5 years:

Completion of Treatment, 1996-2000					
Year	Cases	Comp. ≤ 365 Days	Comp. Overall	Percent Complete ≤ 365 Days	Percent Comp. Overall
2000	338	219	249	73	83
1999	317	191	237	73	90
1998	230	154	182	79	92
1997	286	193	223	82	94
1996	301	196	224	82	93

*Data for 1999 and 2000 are incomplete. Percentages are computed as of 4/19/2002. Not all patients started treatment.

Second, contact investigations for all pulmonary TB cases must be conducted to identify, evaluate, and treat persons with untreated TB disease and persons with latent TB infection (LTBI). The data from contact investigations show that Ohio has done quite well with respect to identifying and evaluating contacts. Identification of at least three contacts per case is a generally accepted minimum standard for contact investigations of TB cases. The following table shows Ohio results for the past 4 years:

Identification of Contacts, 1997-2000		
Year	No. Identified	Avg Contacts per Case
2000	2871	20.9
1999	2351	17.5
1998	2223	9.7
1997	4245	14.8

The national objective for evaluation of contacts is that at least 95% of contacts to TB cases will

be evaluated for infection and disease; for 1999, Ohio achieved 88%. However, data for completion of treatment for contacts with LTBI indicate a challenge. The national objective for infected contacts completing treatment for LTBI is at least 85%; Ohio achieved 45% in 1999 and 50% in 2000.

Conclusion

The core activities for TB elimination are identifying and treating persons with TB disease; identifying and treating contacts who have LTBI; and targeted testing and treatment for LTBI for individuals at high risk of developing TB disease. The data show that Ohio has done well in finding patients and starting them on treatment for TB and LTBI but needs improvement in ensuring that cases and contacts complete treatment, and in the length of time recommended. Recent increased TB incidence has challenged some TB programs, necessitating reallocation of resources to meet the challenge of ensuring core activities. Increased numbers of cases among foreign-born persons highlight a need for effective communication skills among TB program staff and patients. Language and cultural barriers must be overcome to provide care in a culturally competent manner. Appropriate interpreters and language systems should be utilized to assist with communicating effectively with multicultural populations. The Ohio Department of Health stands ready to collaborate with local partners to build and strengthen TB elimination efforts in the face of continuing challenges.

—Reported by Jimmy Keller, MA,
Shirley Dobbins, BA, RN,
Elizabeth Koch, MD, MPH&TM,
and Debbie Merz, MS,
Ohio Department of Health TB Program

“Cross-Cultural Issues in TB Prevention and Control in Minnesota”

While the number of TB cases reported nationally has declined steadily since 1993, the incidence of TB is increasing markedly in Minnesota. From a historical low of 91 cases (2.1 per 100,000 population) in 1988, the number of new cases reached 201 (4.3 per 100,000) in 1999, the largest number reported since 1980. In 2000, the number of new cases dropped to 178, but increased 34% to 239 cases (4.9 per 100,000) in 2001.

The epidemiology of TB in Minnesota represents a magnified version of TB trends nationwide, reflecting both the global incidence of TB and recent immigration patterns. While the number of TB cases among U.S.-born persons in Minnesota generally is decreasing, the number of cases among persons born outside the United States is increasing sharply. For the past 2 years, more than 80% of TB cases in Minnesota have occurred in foreign-born persons. The increasing incidence of TB in Minnesota largely is owing to immigration from high-incidence areas (e.g., Somalia, Ethiopia, Laos, Vietnam, and Mexico). The TB cases reported in Minnesota in 2001 were in persons who originated from 30 different countries. While the vast majority (83%) of cases occurred in the seven-county Twin Cities metropolitan area, 28 of the state's 87 counties reported at least one case in 2001.

The large proportion of diverse foreign-born TB patients in Minnesota increases the challenge of providing adequate clinical and public health TB prevention and control services, particularly in rural areas, which often lack access to cross-

cultural resources. Foreign-born TB patients often have complicating factors such as drug resistance, extrapulmonary disease, problems adhering to prescribed therapy, socioeconomic hardships, and cultural and linguistic barriers. In order to meet these additional needs, public health nurses, outreach workers, and clinicians need more than sound clinical knowledge of TB; they need to develop and practice cross-cultural competence.

In December 2001, the Minnesota Department of Health (MDH) TB Prevention and Control Program used federal cooperative agreement funds from CDC to contract with the Minneapolis-based Center for Cross-Cultural Health to present a workshop, presented in two half-day sessions, titled “Cross-Cultural Issues in TB Prevention and Control in Minnesota.” The Center for Cross-Cultural Health is a community-based organization whose mission is “to integrate the role of culture in improving health.” MDH TB Program staff worked with the center's director, Dr. Okokon Udo, to tailor these workshops specifically for public health professionals working on the front lines with TB patients in Minnesota. A metropolitan area workshop was held at MDH in Minneapolis. A similar workshop targeted to rural professionals was held in St. Cloud, Minnesota, and simultaneously broadcast as a live videoconference at 11 sites statewide. (The conference was videotaped, and MDH has made free copies of the videotape available to local public health agencies, clinics, and others statewide as a training tool.) Dr. Udo was the facilitator and presenter at both sessions. We scheduled two separate workshops to maintain a reasonable number of participants in order to facilitate interactive discussion and to meet the unique cultural competency needs of both rural

and urban providers. Continuing nursing education credits were offered for participants.

Prior to the workshops, MDH surveyed the target attendees to determine their cultural competency needs. These public health professionals statewide reported a need to improve their skills, knowledge, and expertise in the following areas:

- Understanding and implementing methods of communication to achieve cultural competency,
- Involving culturally diverse clients in their own health care decisions,
- Being aware of the resources available locally for culturally diverse populations and being able to assist clients in accessing those resources, and
- Knowing and understanding the history, cultural beliefs, and practices (especially related to health) of their clients.

The survey also indicated that public health professionals in rural Minnesota differ significantly from those in urban/suburban areas. For example, rural respondents rated themselves markedly lower than did their urban/suburban colleagues in the following areas:

- Being able to define culture and how it affects health,
- Understanding the need for cultural competency in health care,
- Being familiar with and able to effectively use different communication styles with clients, including nonverbal communication, and
- Being comfortable working with clients who cannot speak English or whose

communication style is different from your own.

The ethnic/cultural groups represented among foreign-born TB clients differ between the rural and urban populations, with more African and Southeast Asian persons in urban areas and more Hispanic/Latino persons in rural areas.

The vast majority of workshop participants were public health nurses. Other participants included physicians, outreach workers, and nurses in other settings such as meat packing plants that employ large numbers of foreign-born persons. Both workshops were very well attended.

Dr. Udo did an excellent job tailoring each workshop to the participants' needs, engaging the participants, and using TB-related examples to illustrate the challenges and importance of cultural competence in health care. Participants completed evaluation forms following the workshops, and their responses were overwhelmingly positive. The majority of participants provided comments such as the following on their evaluation forms:

"Very applicable, I will use (this information) daily/hourly."

"This was a great workshop and I will take (these concepts) home to use every day – some very new, smart ideas. Thank you."

"I appreciated... the quote (which is my idea of a healthy community and healthy people)... 'value all of our differences and co-create a healing environment'."

Some participants also expressed a desire for more specific information about the culturally

diverse populations living in their area or more clinical information about TB.

The MDH TB Program was delighted to be able to offer these unique and highly useful workshops for our partners in TB prevention and control at the local level. We were impressed by the participants' eager receptivity. We look forward to exploring additional ways of continuing our collaboration with the Center for Cross-Cultural Health and of pursuing other means of enhancing the capacity for cultural competence statewide. In the future, we would like to offer a similar workshop or forum targeted to communities of persons most affected by TB so that, just as providers work at developing their own cultural competency, community members themselves can do the same. In the recent workshops, Dr. Udo articulately emphasized the (sometimes overlooked) corresponding need for individual patients from diverse cultures to gain knowledge and expertise needed to understand and adapt to the distinct "culture" of health care and public health systems in the United States. Providing continued opportunities to enhance the cultural competence of both providers and patients is an important step in enabling both groups to meet half-way along the road toward implementing effective and mutually acceptable TB prevention and control strategies.

—Submitted by Marge Higgins, L.S.W.
TB Program Refugee and Immigrant Coordinator
MDH TB Prevention and Control Program

"Tuberculosis: Multiple Perspectives on a Global Health Emergency"

The above was the title of a course taught by

Richard Fluck, Ph.D., in the Woodrow Wilson School of International and Public Policy at Princeton University during the fall semester of the 2001-2002 academic year. The course was a response to Princeton students' interest in a course about TB. Subsequent conversations with Princeton Project 55's Tuberculosis Initiative and Dr. Lee Reichman, Executive Director, New Jersey Medical School National TB Center, led Princeton University to invite Dr. Fluck to teach the course. The 13 students in the course included majors in Ecology and Evolutionary Biology, Molecular Biology, Politics, Psychology, and the Wilson School (Public Policy).

The heart of the course was a semester-long paper or community-based project. The paper topics included cross-cultural issues in TB control; gender and TB; U.S. aid in global TB control; procurement agencies; an analysis of the STOP-TB virtual forums on TB/HIV and DOT; and the molecular biology of the immunological response in TB. Two students, working with Mr. Kenneth Shilkret, Manager of the TB Program, New Jersey Department of Health and Senior Services, performed an epidemiological analysis of TB cases in Middlesex County, New Jersey, a county with a high number of immigrants from South Asia, Mexico, and the Philippines. Two other students, also working with Mr. Shilkret, performed a community assessment of a town in Middlesex County with a large South Asian population. The community-based projects were facilitated by Trisha Thorne of Princeton University's Community-Based Learning Initiative. Three visitors made substantial contributions to the course as well: Larry Geiter (vaccine development); William Jacobs, Jr. (molecular genetics); and Lee Reichman (multidrug-resistant

TB).

For more information on the course, you can contact Richard A. Fluck by mail: Dr. E. Paul & Frances H. Reiff Professor of Biology, Dept. of Biology, Franklin and Marshall College, P.O. Box 3003, Lancaster, PA 17604-3003, USA; by telephone at (717) 291-4152; by fax at (717) 358-4548; or by e-mail at r_fluck@fandm.edu.

—*Reported by Richard Fluck, PhD
Franklin and Marshall College*

The DTBE Outbreak Evaluation Unit

The Outbreak Evaluation Unit (OEU) has met weekly since January 11, 2001, as chartered in the DTBE Outbreak Response Plan and has proven helpful in coordinating the outbreak responses of the Surveillance and Epidemiology Branch (SEB) and the Field Services Branch (FSB) to states, counties, and cities. The members comprise staff from FSB, SEB, and the Office of the Director (OD). The recently developed Report of TB Transmission (RTT) can originate from a Duty Officer call, from a call to SEB or FSB, or from information provided to a program consultant. The OEU received 30 reports of suspected TB transmission during calendar year 2001 and provided feedback to all 30 of the affected jurisdictions. For four states, the OEU recommended an epi-aid on-site assessment. On three occasions, the OEU recommended assigning a public health advisor from FSB to go on site. Through the discussions of these investigations and the related findings and recommendations, the state, local, and CDC personnel involved were all provided valuable training opportunities. In 13 instances, when the

RTT report did not lead to on-site assistance, the OEU recommendations were discussed with state TB programs by an epidemiologist from SEB. Technical recommendations were also communicated through the program consultants.

DTBE, in collaboration with the Epidemiology Program Office of CDC, seeks opportunities to assign Epidemic Intelligence Service (EIS) Officers to investigate TB outbreaks and other unanticipated events. These joint investigations (e.g., epi-aids) contribute to local, state, and national skills building in epidemiology. The investigations also form a foundation for procuring emergency federal funds from DTBE for outbreak containment. To report a potential outbreak to OEU, please notify your program consultant at (404) 639-8126.

—*Reported by Joseph Scavotto,
Deputy Chief, FSB and Chairman, OEU;
John Jereb, MD, Medical Officer, FSB; and
Wyndham Reed, MPA, Program Analyst, FSB*

UPDATES FROM THE COMMUNICATIONS AND EDUCATION BRANCH

World TB Day Activities

As you know, World TB Day was March 24. On this day in 1882, Dr. Robert Koch announced his discovery of the tuberculosis (TB) bacillus. Observance of this day is intended to raise awareness about the devastating health and economic consequences of TB, its impact on developing countries, and its continued overwhelming impact on global health.

CDC's theme for World TB Day this year was "TB

Elimination: Now Is the Time." A poster with this theme was sent to TB controllers and other partners by mail. Additional copies of the poster are still available in limited quantities by calling the CDC National Prevention Information Network (NPIN) at 1-800-458-5231 or by visiting their Web site at <http://www.cdcnpin.org>. Request inventory item number P008.

To assist TB controllers and other partners in their TB elimination efforts, we also included the following items in the mailing:

"TB Elimination: Now Is the Time" brochure. This contains key messages about TB not being a disease of the past, the consequences of neglecting TB control programs, and what must be done to finish the job of eliminating TB in the United States.

"TB Elimination: Now Is the Time" fact sheet. This is a condensed version of the brochure and also contains key messages about TB control efforts in the United States.

"TB Elimination: Now Is the Time" trends document. Composed in a newsletter format, this discusses trends in TB elimination based on data through the year 2000.

"World TB Day" fact sheet. This contains historical information on World TB Day, the impact of TB worldwide, and global TB data.

In observance of World TB Day, DTBE and the National Center for HIV, STD, and TB Prevention (NCHSTP) Office of Communications sponsored a program at CDC in Atlanta on March 28. Dr. Lee Reichman, Executive Director of the New Jersey Medical School National TB Center and

author of the book *Timebomb*, was the guest speaker. DTBE also posted information about World TB Day events around the country on the DTBE Web site at <http://www.cdc.gov/nchstp/tb/>. The site is still active and features an interactive map of World TB Day activities around the United States. Last year on World TB Day, a number of U.S. localities were very successful in attracting significant press attention to local as well as national and global TB problems.

The March 22 issue of *MMWR* highlighted two of CDC's efforts to eliminate TB: a response to a local outbreak of TB in the United States and an evaluation of the epidemiology of TB in India.

DTBE also participated in the National Coalition for the Elimination of Tuberculosis (NCET) meeting in New Jersey. Eileen Schneider, MD, made a presentation on TB trends in the United States and Kenneth Castro, MD, provided an update on CDC's response to the Institute of Medicine report on TB. NCET also hosted a press conference and released a white paper, *Tuberculosis Elimination — the Federal Funding Gap*. To obtain a copy of the paper, contact Diane Maple, Media Relations Director of the Washington, DC, American Lung Association (ALA) office by e-mail at dmaple@lungusadc.org. It is also available on the ALA Web site at www.lungusa.org/press/legislative/leg032102.html.

—Reported by Scott McCoy, MEd
Division of TB Elimination

New Tuberculin Skin Test Ruler

DTBE is pleased to announce the availability of a calibrated Mantoux tuberculin skin test millimeter

ruler. DTBE staff have been working to develop new updated educational materials on the Mantoux tuberculin skin test, and the ruler is the first item to be developed as a part of this project. DTBE has already mailed out these rulers to TB controllers and CDC field staff.

Key messages about how to read the skin test have been printed on the ruler. In addition, a 6" by ½" space was left on the back of the ruler to allow local contact information to be added; this could be written with a permanent marker or attached with a label.

The Mantoux tuberculin skin test ruler can be requested in the following ways:

- Through the DTBE's online ordering system at www.cdc.gov/nchstp/tb
- By mailing or faxing the DTBE Educational and Training Materials Order Form at the back of this issue
- Through the CDC Voice and Fax Information System by calling toll free 1-888-232-3228, then selecting 2, 5, 1, 2, 2 and requesting order #99-7047.

We hope this tuberculin skin test ruler will be a useful tool for your staff and for other health providers in your area who are administering and reading the tuberculin skin test.

*—Reported by Gabrielle Benenson, MPH
Division of TB Elimination*

Several staff of the Communications and Education Branch (CEB) are working on projects through a task order mechanism with a contractor and the TB Model Centers. The following two CEB articles describe two of the projects that are currently in development.

Cohort Review Process Education Project

The purpose of this project is to produce educational materials that TB program supervisors can use to improve overall TB case management through continuous quality improvement, which is done by conducting cohort case reviews. Cohort case reviews are a mechanism for providing quality assurance as well as for monitoring TB cases and contacts to TB cases.

The cohort review educational materials will be designed for use as both a stand-alone, self-study product or as material for group-facilitated instruction. This product design, based on distance-learning methodology, facilitates distribution of the product to national audiences and is inclusive of, but not dependent on, stand-up classroom instruction.

The proposed educational materials will consist of print-based and videotape materials. The print materials will include interactive, problem-based strategies utilizing case studies. The videotape will model effective cohort review strategies by highlighting and simulating examples of successful cohort review strategies and methods undertaken by TB prevention and control programs in New York City and other locations. In addition, the videotape version will include several case studies to bring to life and contextualize the cohort review process. The first phase of the project, a needs assessment, is currently underway.

*—Reported by Scott McCoy, MEd
Division of TB Elimination*

Culturally Appropriate TB Patient Education Materials Project

The purpose of this project is to develop culturally and linguistically appropriate TB patient education materials for national distribution, utilizing a systematic health education planning process. Research in the field of health education demonstrates that materials appropriately targeted to specific populations are more effective in changing health behaviors in those populations than materials that are not targeted. As TB rates remain higher in the foreign-born population, the need for culturally and linguistically appropriate educational materials becomes more critical. Materials will be developed for the Hispanic/Latino, Vietnamese, Filipino, and low-literacy populations. The materials will cover the following topics:

- General information about tuberculosis
- Mantoux tuberculin skin test
- Treatment and patient adherence
- HIV/AIDS and TB
- Contact investigations
- Latent TB infection

The first phase of the project, a needs assessment, is currently underway.

*—Reported by Gabrielle Benenson, MPH
Division of TB Elimination*

INTERNATIONAL NOTES

International Activity Organizational Restructuring

The International Activity (IA) in DTBE was established in 1993 and currently consists of a

staff of 17 professionals, including six epidemiologists or medical epidemiologists, two public health advisors, three Epidemic Intelligence Service Officers, two Fellows, and an administrative support staff member based in Atlanta. DTBE/IA field staff include a medical epidemiologist assigned to a field site in Botswana, a medical epidemiologist detailed to the International Union Against Tuberculosis and Lung Diseases (IUATLD) in France, and until recently a medical epidemiologist detailed to the World Health Organization (WHO) in India.

In addition, multiple members of DTBE as well as others at CDC work closely with a wide range of international collaborating partners including WHO, the U.S. Agency for International Development (USAID), the Royal Netherlands Tuberculosis Association (KNCV), and numerous national tuberculosis control programs (NTPs) around the world to provide technical assistance and expert consultation.

The mission of IA is to improve the quality of TB control internationally and among foreign-born persons in the United States, and to provide leadership and coordination of CDC activities in countries with a high burden of TB or of strategic interest for TB control in the United States. IA was restructured in July 2001, and its staff were grouped into four teams. Each team is focused on a specific objective or theme:

Team 1- Epidemiology and Evaluation (team leader Kayla Laserson, ScD): Evaluates TB control programs by providing operations research on TB programmatic activities. Also provides technical assistance for surveillance of TB and MDRTB in countries with high TB burden or those of strategic interest to the United States.

Team 2 - TB in Foreign-born Populations (team leader Kayla Laserson, ScD): Assists in the improvement and evaluation of overseas screening for TB disease among immigrants and refugees, undertakes epidemiologic investigations leading to improved targeted testing and treatment of latent TB infection (LTBI), and improves binational communication regarding individual TB.

Team 3 - TB/HIV (team leader Elizabeth Talbot, MD): Improves diagnosis and treatment of active TB in HIV-infected persons, improves the diagnosis and treatment of LTBI in HIV, and promotes and evaluates integration of TB and HIV programs, including the appropriate use of antiretrovirals.

Team 4 - MDR TB (team leader Peter Cegielski, MD, MPH): Prevents further emergence of multidrug-resistant TB (MDR TB) by enhancing basic TB control and improving institutional infection control, promotes effective anti-TB drug resistance diagnosis and surveillance, assists in implementing programs to treat MDR TB, and evaluates program performance.

—Reported by Erika Vitek, MD
Division of TB Elimination

Tuberculosis Control in India, 2001

As reported in a recent *MMWR*, nearly 2 million people develop TB annually in India, accounting for one fourth of the world's new TB cases. Following a comprehensive review of national TB control activities in 1992, the Government of India established a Revised National Tuberculosis Control Programme (RNTCP) using the World Health Organization's (WHO) recommended strategy of directly

observed treatment, short-course (DOTS). The DOTS strategy consists of sustained government commitment, effective laboratory-based diagnosis, standard treatment given under direct observation, a secure drug supply, and systematic monitoring and evaluation. The program was implemented in pilot areas beginning in 1993, and large-scale implementation of the RNTCP began in late 1998. As of November 2001, the RNTCP offered TB control services to regions that represent >40% of the country's population (>440 million persons), up from less than 2% in mid-1998. Currently, over 5,000 patients are examined for TB under the RNTCP, and more than 1,300 patients are started on treatment daily. Under the DOTS strategy, more than 80% of patients have been successfully treated, and 81% of initially sputum smear-positive patients have laboratory evidence of sputum conversion to negative. The 4% death rate in RNTCP areas is remarkably lower than the observed mortality in non-RNTCP areas, where 29% mortality has been documented among treated smear-positive TB patients.

Efforts to expand effective and comprehensive TB care in India have been remarkably successful despite considerable challenges, several of which were enumerated in a recent WHO program review. A large private sector continues to be the first provider for many patients, often resulting in uncoordinated and inconsistent diagnosis and treatment of TB. Many areas lack regular electric supply, limiting the effectiveness of microscopy. Drought and economic hardships cause large-scale migration, reducing treatment completion and cure rates. Drug resistance is also an impending threat, and surveillance in several areas in India

has found that 1% to 3.3% of new patients have multidrug-resistant TB. This is higher than in many countries, but much lower than in "hot spots" described by the WHO, such as areas of the Former Soviet Republics (10% to 15%) and New York City in the early 1990s (7%). The HIV pandemic is considered to be the most serious threat to TB control in India. Current estimates suggest that there are nearly 4 million HIV-infected people (less than 1% of the population) in India, and that approximately half of these individuals are also infected with *M. tuberculosis*. Continued spread of HIV will likely contribute to increases in TB cases, potentially threatening recent advances in TB control in some areas.

At its current size, the TB control program in India is now one of the largest public health programs in the world. Continued expansion to the entire country is under way, with plans to cover 80% of the country by 2004 and 100% by 2005. Sustaining and expanding this program will require continued high-level commitment from the central and state governments of India, supplemented by coordinated assistance from international and bilateral organizations.

—Reported by Lorna Thorpe, PhD
Division of TB Elimination

Bidding Adieu to Susan Cookson, A Valuable DGMQ Asset

Susan Temporado Cookson, MD, Chief of the Medical Health Assessment Section (MHAS) within the Division of Global Migration and Quarantine (DGMQ), will leave the Division in September 2002 to obtain a masters degree in public health through the International Health Leadership Program at Emory University's

Rollins School of Public Health. Part of her work at Emory University will include a project with Anne Haddix, formerly of CDC, in cost-effectiveness analysis. From March through August 2002, Susan will work in the Office of the Director, DGMQ, preparing manuscripts reflecting the health assessment work that has taken place during her tenure.

One of the main foci of migration health assessment is TB. Susan's interest in TB extends back to the late 1980s, when she operated a TB clinic in Nicaragua for 3 years. Following completion of an infectious disease fellowship, she came to CDC in 1995 as an EIS Officer, and was assigned to the then-named Hospital Infections Program, now the Division of Healthcare Quality Promotion (DHQP), subsequently publishing 11 articles. Susan joined the Division of Quarantine (now the Division of Global Migration and Quarantine) in January 1997. In October 1998, she became Chief of the Medical Screening and Health Assessment Section (now the Migration Health Assessment Section) within the division. Through Susan's leadership, many substantial improvements have been made within the section. These are highlighted below:

Standardization of Quality Assessment

The evaluation of overseas panel physician sites that assess potential immigrants and refugees changed from visits by two public health advisors stationed overseas to a structured assessment by a bidisciplinary team. This team, composed of a physician and a microbiologist, uses formal tools for evaluating the sites' medical, laboratory, radiology, and vaccination activities. Currently, the tools are being revised to allow an even more objective assessment.

Terry Comans, the microbiologist, is now the team leader of this quality assessment effort.

Creation of New U.S. Department of State Health Evaluation Form and Worksheets

In conjunction with the U.S. Department of State, DQ staff created a new health evaluation summary form, with three accompanying worksheets. A more detailed explanation of the overseas applicant evaluation was also formulated. The chest x-ray and classification worksheet provides an algorithm for the panel physician to use to determine whether an applicant has a Class A TB condition requiring treatment before entry into the United States, or a suspected Class B TB condition, resulting in notification of a state health department that follow-up is needed after entry into the United States. The form and worksheets were introduced to the U.S. consulates in spring 2001.

Introduction of Electronic Notification System

The TB and Refugee Notification System (TBRN), a pilot study to determine the feasibility of electronically notifying states of the arrival of all refugees and of all immigrants and refugees with suspected TB, was conceived in 1998 and proved to be quite successful. The pilot study, which is being conducted in California, Georgia, Florida, Illinois, Massachusetts, New York, Texas, and Virginia, with participation from New York City and Chicago, is now fully operational. Plans for continuing and expanding the electronic notification system are already underway and will be spearheaded by James (Bo) Barrow of DGMQ and Stuart McMullen of DTBE after Susan's departure.

Personnel Expansion

Recent additions to the MHAS staff include Maria Cano, MD, MPH, an infectious disease specialist responsible for the refugee and vaccination activities of the section, and Mary Naughton, MD, MPH, a radiologist who is responsible for day-to-day TB activities within the section. Pam Copelan, formerly employed by the Immigration and Naturalization Service (INS), continues to contribute her extensive expertise in INS and regulation issues, and Terry Comans' role has expanded to include oversight of other microbiologists in addition to supervision of revision of the quality assessment tools.

MHAS has changed dramatically during Susan's tenure. We thank her for her many contributions and her tireless dedication to the section and wish her the best as she continues to expand her knowledge of and work within the field of international public health.

—Reported by Mary Naughton, MD, MPH
TB Medical Officer

Division of Global Migration and Quarantine

UPDATE FROM THE RESEARCH AND EVALUATION BRANCH

Anthropological Contributions to TB Research and Control

Last winter, at the request of other anthropologists at CDC, Robin Shrestha-Kuwahara and Maureen Wilce of the Prevention Effectiveness Section, Research and Evaluation Branch (REB), DTBE, began drafting a chapter on TB for the multi-volume *Encyclopedia of Medical Anthropology*. The chapter identifies important anthropological and social science

contributions to our understanding of the behavioral issues pertinent to the control of global TB. Anthropology, like other social sciences, examines issues from the perspectives of the individual and community. Through methods such as case studies, ethnographies, discourse analysis, participant observation, and in-depth interviews, anthropologists have examined the interplay among the biologic, psychologic, sociocultural, socioeconomic, and structural factors that affect TB-related behaviors. Their work has provided new insight into the understanding of the dynamics of TB transmission.

To write this chapter, Robin and Maureen conducted a review of over 200 articles published between 1966 and the present, with help from ASPH fellow Heather Joseph and Drs. James Carey, Esther Sumartojo (Division of HIV/AIDS Prevention), and Rebecca Plank (former REB assistant). The review shows that research into the social and cultural context in which TB programs exist has focused on a relatively small number of cultures, limiting our understanding of how external factors may influence behavior. Nevertheless, the published social science research provides valuable information on key issues affecting patient outcomes. Issues related to care-seeking behaviors, adherence to treatment, stigma, program structure, and patient-provider relationships are particularly important to TB control. Following are some of the findings.

Understanding care-seeking behaviors

The wide body of research surrounding care-seeking behavior demonstrates that the issues are multilayered and complex. For example, understanding how people interpret TB causes

and symptoms helps providers understand why people may delay seeking treatment. In Thailand, research indicates that some people, associating their TB symptoms with HIV/AIDS, delayed seeking treatment for fear of having AIDS. In Kenya, patients attributed TB to causes such as a hereditary predisposition, consumption of alcohol or tobacco, or witchcraft, which often resulted in delayed care seeking. Recent work in the Philippines shows that many patients linked TB to drinking or smoking and, thus, delayed seeking treatment for "harmless" symptoms.

Cultural beliefs about the causes of TB may influence how people treat their symptoms. In Ethiopia, interview respondents believed TB and all other diseases were generally caused by imbalances in behaviors or diet, and were best treated by herbal remedies and "good" foods. Another study found that the Xhosa-speaking people of South Africa often associated TB with a lack of hygiene and witchcraft, specifically the lightning bird, *impundulu*, and sought care first from a diviner. Only when traditional treatment failed did they seek Western medicine.

In industrialized nations, researchers have conducted numerous qualitative studies on the health behaviors of immigrant and refugee groups. Concern for family among Latino immigrants to the United States was found to motivate people to seek care and adhere to treatment. For Latinos in California, while trust in clinical practices and social connections facilitated treatment adherence, access issues most affected care seeking. Similarly, the presence of social support reduced TB incidence among foreign-born persons in Massachusetts; however, economic and social

disadvantages often outweighed protective factors.

Understanding treatment adherence

The issue of nonadherence to TB medications has frequently been examined. Although the varied approaches and methodologies have yielded a wide range of findings, no predominant pattern has emerged. Many social scientists have identified patient health beliefs or health cultures as the main "cause" of nonadherence. However, other social scientists see the issue of nonadherence stemming from complex factors both within and beyond the patients' control. These factors include patients' confusion about the implications of symptoms, social stigma, perception of services and providers, costs of transportation, the high cost of medications, and service delivery problems.

Research in India found a high default rate despite high levels of patient knowledge and care seeking. In rural Haiti, while many patients accepted sorcery as a possible cause for TB, their beliefs had no impact on adherence with biomedical regimens. Similarly, high rates of adherence were found among migrant farm workers, regardless of whether they attributed their symptoms to biomedical causes or "folk illnesses." In Tanzania, researchers found no connection between knowledge of TB and completion of treatment.

Considering the vast inequities that persist throughout the world, some social scientists assert that individuals who do not adhere to therapy are probably the ones least able to adhere, and that focusing solely on the socio-cultural dimensions of adherence is too short-sighted. In an investigation of factors affecting

medication-taking behavior in central India, it was found that three socioeconomic variables, not cultural factors, were the strongest predictors of adherence: a family's per capita income, its monthly income, and its type of house.

The impact of stigma

Few would disagree that the social stigma attached to TB occurs universally. Numerous studies have shown patients' denial or hesitation to disclose their TB status to family or friends out of fear of being socially ostracized. Researchers reported that of a group of Vietnamese refugees studied in New York, 77% believed the community would fear and avoid persons with TB. Fear of stigma among Mexican immigrants in California caused TB patients to cease contact with family and friends. Similarly, a study in Mexico reported that patients blamed the social consequences of stigma for their long delays in seeking care and poor treatment adherence. In Honduras, fear of losing family and friends led some TB patients to report preferring death to social rejection.

In societies where women occupy a lower status, feared social consequences of a TB diagnosis may result in undertreatment and increased mortality. Studies in India have shown that married women delay seeking treatment or hide their diagnosis from their husbands out of fear of being deserted. In Nepal, the low status of women and fear of social ostracism hinder access to adequate TB care.

Provider behavior and service delivery

Social scientists have helped develop a more accurate understanding of the determinants of patient outcomes by recognizing the influence of provider behavior and the existence of biases

and cultural gaps between patients and providers. Studies have shown that, perhaps unsurprisingly, patients respond positively to attention and encouragement. A recent review of program-level interventions showed that program success is frequently attributed to friendly patient-staff relationships and staff competence. Conversely, a study in Colombia found that providers had created an unfriendly clinic environment by stigmatizing patients and then blamed the patients for failing to complete treatment. In Israel, Ethiopian immigrants experienced condescension and paternalism from physicians, which exacerbated patients' hesitance to seek or remain in care.

Studies have demonstrated a cultural gap between patients and providers and strikingly different perceptions of barriers to adherence and of the information exchanged. Such gaps, it has been theorized, result in the use of poor information for policy planning. Moreover, a lack of understanding of the cultural differences in attitudes can diminish the trust between physician and patient. Fueling patients' mistrust, major deficiencies have been found in appropriate physician knowledge, attitudes, and practices in TB.

Program structure

Although few scientists have examined the overall dynamics of the sociopolitical and economic environment of TB, social scientists have shown that program structure and systems organization can have a major impact on TB care. For example, studies in Haiti have shown that comprehensive health and social services can successfully reduce mortality and drug resistance. In Mexico, policy interventions that addressed structural barriers resulted in

improved patient adherence. Similarly, routine provision of a comprehensive array of individualized services resulted in major decreases in TB cases in New York.

The need to integrate patient and community perspective in TB program structure has also been illustrated. Further, economic studies have shown the high financial burden TB places on families and the need for assessing patient costs and acceptability when designing TB programs. Social science research has helped highlight the effectiveness of comprehensive health care systems that address the core issues behind TB risk factors, such as overcrowding, malnutrition, and limited access to health care services.

Current tools and future directions

Advances in understanding health cultures and the impact of health systems have resulted in new tools and approaches that are improving the quality of patient care and service delivery. In the area of communication, anthropologists have developed practical tools to enhance the quality of patient-provider interactions. A cultural assessment interview tool developed by CDC anthropologists has helped programs better understand their diverse patient populations. In the United Kingdom, the discipline of "transcultural medicine" was pioneered to help overcome providers' ignorance of patients' health cultures and attitudes. Guides and recommendations have been developed to heighten understanding of cross-cultural issues and improve the quality of patient services.

Numerous theoretical models and methodologies have been developed to better understand individual and interpersonal health behavior and perspectives on organizational and

community interventions. Methodologies traditionally used in anthropological research have yielded rich information regarding health beliefs and behaviors. Social network methods have been recently adopted to improve the effectiveness of TB contact investigations.

Anthropology and other social sciences have brought new perspectives on an ancient disease. Recognizing the broader sociocultural dimensions of TB, many social scientists stress the need to examine the structural and operational barriers hindering the development and sustainability of interventions. Critics of the purely cognitive or cultural explanations point out that many ethnographic studies have demonstrated that predictors of care-seeking, compliance, and treatment outcomes are fundamentally economic and structural in nature. However, virtually all social scientists encourage looking beyond the current biomedical model of TB control toward a multidisciplinary research framework.

*—Reported by Robin Shrestha-Kuwahara, MPH
Division of TB Elimination*

UPDATES FROM THE SURVEILLANCE AND EPIDEMIOLOGY BRANCH

The RVCT Revision Process – Update

As many of you know, an e-mail was sent out to U.S. TB controllers in summer 2001 announcing DTBE's plan to revise the Report of Verified Case of Tuberculosis (RVCT). It was anticipated that this would be a multiyear process; to start the process, we asked for your comments, as well as volunteers for an ad hoc RVCT working

group.

Since the initial announcement, a summary of your comments has been compiled and a working group established. The working group (about 25 members) has been in contact routinely (every 1 or 2 weeks) by conference call since mid-September and has been systematically reviewing the submitted comments, the RVCT variables, and the RVCT instructions. By mid-February 2002, the working group had reviewed the comments and variables, and is currently assembling a first draft of the revised RVCT variables and instructions. Additional conference calls are planned to further discuss pending issues and it is anticipated that by the summer of 2002, a draft of the revised RVCT will be available for comment. In addition, we have met with the Tuberculosis Information Management System (TIMS) team and presented our preliminary timeline and general comments. The working group will continue to work with the TIMS team on revised RVCT and National Electronic Disease Surveillance System (NEDSS) issues.

An update and brief summary of the RVCT revision process to date is planned for the National TB Controllers Workshop in 2002. As always, the revision process continues to accept comments, so if you have any questions or concerns, please do not hesitate to contact Dr. Eileen Schneider by telephone at (404) 639-5345 or by e-mail at eschneider@cdc.gov.

*—Submitted by Eileen Schneider, MD
Division of TB Elimination*

Revising the 1994 TB Infection Control Guidelines

In 1999, on the recommendation of the Advisory

Council for the Elimination of Tuberculosis (ACET), CDC began revising the 1994 "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health Care Facilities." As part of this process, CDC held a consultation with TB experts in Atlanta January 24-25, 2002.

The meeting was attended by 38 outside TB experts and 15 CDC employees. Outside experts included TB controllers, TB control program staff, infection control (IC) physicians and nurses, hospital epidemiologists, industrial hygienists and engineers, labor union representatives, and staff from the Occupational Safety and Health Administration (OSHA). CDC staff included members from DTBE, the National Center for Infectious Diseases, the Public Health Practice Program Office (PHPPPO), the Division of Healthcare Quality Promotion, the National Institute for Occupational Safety and Health, the Occupational Health Services, and the Division of Oral Health. The members of the TB IC workgroup are Dr. Paul Arguin, Dr. Diane Bennett, Dr. Denise Cardo, Dr. Jennifer Cleveland, Dr. Michael Iademarco, Dr. Paul Jensen, Ms. Lauren Lambert, Dr. Adelisa Panlilio, Ms. Teri Palermo, Dr. John Ridderhoff, Dr. Renee Ridzon, and Dr. Pattie Simone.

On the first morning of the meeting, members of the TB IC workgroup made presentations and generated discussion about the proposed changes to the guidelines. In the afternoon, the participants met in small breakout groups for further discussion. On the second day, the entire group reconvened and recorders from the small breakout sessions presented their group's recommendations.

The primary differences between the 1994

guidelines and the 2002 draft are as follows: the guidelines have been expanded to include other health care settings in addition to hospitals; new terminology has been adopted (e.g., tuberculin skin test or TST rather than PPD, treatment for latent TB infection or LTBI rather than preventive therapy); recommendations for skin testing frequency have been revised; and the discussion of environmental controls has been expanded. The new IC guidelines will also include an appendix with frequently asked questions (FAQs), which will provide examples and clarify misconceptions.

A follow-up meeting to discuss the proposed revisions and recommendations was held in Atlanta on March 20, and the next meeting will be held in Atlanta on May 8, 2002. The final guidelines will be submitted for approval to ACET, and will then be published in the *Federal Register* before being published in final form in the *MMWR*.

—Reported by Lauren A. Lambert
Division of TB Elimination

Tuberculosis Morbidity Among U.S.-born and Foreign-born Populations — United States, 2000

(The following is a summary of the TB morbidity article published Feb. 8, 2002, in the *MMWR*. The article can be accessed at the Web site <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5105a3.htm>.)

This report summarizes data from the national TB surveillance system for 2000 and compares them with data for 1992 to 1999. During 2000, a total of 16,377 cases (5.8 cases per 100,000 population) of TB were reported to CDC from the 50 states

and the District of Columbia (DC), representing a 7% decrease from 1999 and a 39% decrease from 1992 when the number of cases and case rate most recently peaked in the United States. However, the case rate among foreign-born persons remains at least seven times higher than among U.S.-born persons. To address the high rate, CDC is collaborating with public health partners to implement TB control initiatives among recent international arrivals and residents along the border between the United States and Mexico and to strengthen TB programs in countries with a high incidence of TB disease.

In 2000, 53% of reported cases were among U.S.-born persons while 46% were among foreign-born persons. In 1992, in contrast, 72% of reported cases were among U.S.-born persons while 27% were in foreign-born persons. The number of states with $\geq 50\%$ of their annual total of reported TB cases among foreign-born persons increased from four in 1992 to 21 in 2000. Of these 21 states, California, Hawaii, Massachusetts, Minnesota, and New Hampshire had $\geq 70\%$ of their annual total of cases among foreign-born persons.

In 2000, of the 7,554 cases of TB in foreign-born persons, 41% occurred among persons from Central and South America or the Caribbean, and 33% were from the Western Pacific (designated by the World Health Organization). These regions also had the largest number of cases in 1992 (44% and 40%, respectively). From 1992 to 2000, the number of cases approximately doubled among persons from the Mediterranean (2% in 1992 and 5% in 2000) and among persons from Southeast Asia (6% in 1992 and 10% in 2000), while the number of cases among persons from Africa tripled (2% in

1992 and 6% in 2000).

The proportion of patients with MDR TB decreased from 3% in 1993 to 1% in 2000. However, of the total number of reported MDR TB cases, the proportion occurring in foreign-born persons increased from 31% (150 of 486) in 1993 to 72% (101 of 141) in 2000. The proportion of TB patients placed on a recommended initial treatment regimen (i.e., isoniazid, rifampin, pyrazinamide, and streptomycin or ethambutol), increased from 1993 to 1998. The proportions of patients who completed treatment within 1 year and who were treated with directly observed therapy (at least for a portion of treatment) increased also during this period.

From 1992 to 2000, TB case rates in the United States decreased for U.S.-born and foreign-born persons; however, the decrease among foreign-born persons was less substantial. Decreases in the number and proportion of MDR TB cases also occurred. The overall improvement is consistent with the finding of an increasing proportion of patients receiving initial four drug regimens, completing treatment within 1 year, and being treated with directly observed therapy.

Despite the decrease in case rate among foreign-born persons, nearly half of TB cases in the United States in 2000 occurred in this population, and the case rate was seven times greater in this population than among U.S.-born persons. To address the high rate, CDC is collaborating with other national and international public health organizations to 1) improve overseas screening of immigrants and refugees by developing systematic tools for monitoring and evaluating the screening process; 2) improve the current notification system that alerts local health departments about the arrival of

immigrants or refugees with suspected TB to assist patients in obtaining a medical evaluation and, if necessary, in completing a course of recommended drugs; 3) improve coordination of and communication about TB control activities between the United States and Mexico to ensure completion of treatment among TB patients who cross the border; and 4) test recent arrivals from high-incidence countries for latent TB infection and ensure completion of treatment. In addition, CDC continues to strengthen collaborations with international partners, including the World Health Organization, to improve TB control in high-incidence countries.

Accelerating progress in national TB elimination activities, however, will require broader prevention efforts to evaluate and address unmet needs in other population risk groups such as persons living with HIV, and persons living in poverty with limited access to medical care and adequate housing and nutrition. In addition, low-incidence areas in the United States need continued support to ensure they maintain the capacity and expertise to respond to cases when they occur. CDC is currently updating its comprehensive national action plan to ensure that priority prevention activities are undertaken with optimal collaboration and coordination among national and international public health partners. Commitment and participation by CDC in efforts towards curtailing the global TB epidemic will remain a critical component of the national plan.

—Reported by Lilia Manangan, RN, MPH
Division of TB Elimination

NEW CDC PUBLICATIONS

Ansari NA, Kombe AH, Kenyon TA, Hone NM, Tappero JW, Nyirenda ST, Binkin NJ, Lucas SB. Pathology and causes of death in a group of 128 predominantly HIV-positive patients in Botswana, 1997—1998. *Int J Tuberc Lung Dis* 2002; 6(1): 55-63(9).

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Vernon A, Burman W, Horsburgh CR. Another step on the path to better TB therapies.

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Vranken P, Coulombier D, Kenyon T, Koosimile B, Mavunga T, Coggin W, Binkin N. Use of a computerized tuberculosis register for automated generation of case finding, sputum conversion, and treatment outcome reports. *Int J Tuberc Lung Dis* 2002; 6(2):111-120(10).

PERSONNEL NOTES

Jacob Creswell, MPH, has joined DTBE as a CDC Foundation fellow with the Communications and Education Branch (CEB). Jacob began working in CEB on February 20, 2002, and will be working for the next 2 years on PARTNERS TB control activities in Peru. The PARTNERS activities project is a collaborative effort to strengthen the strategies for treatment of multidrug-resistant TB (MDR TB) in Peru. Jacob has a B.A. in Latin American Studies and Government from Wesleyan University and an MPH from Yale University. Most recently, Jacob worked as a Health Care Analyst for the Evaluation Research Section, Division of Adolescent and School Health at CDC. He was also a Health Communications Fellow in the Special Pathogens Branch in the National Center for Infectious Diseases. Jacob is fluent in Spanish and has worked in various settings in Latin America.

Tracina Cropper has been selected for the public health advisor position in Philadelphia, Pennsylvania. Tracina began her career in public health on September 23, 1991, when she joined CDC as a public health associate with the Division of Sexually Transmitted Diseases (STD) and was assigned to the STD Disease Intervention Specialist training center in Decatur,

Georgia. In October 1992, she was assigned to the Philadelphia STD program as a public health advisor/disease intervention specialist. Tracina's interest in TB control led her to leave CDC and join the City of Philadelphia TB control program in February 1998 where she rapidly advanced to the position of outreach team leader. Tracina began her DTBE assignment on December 17, 2001.

Alstead Forbes has been selected as a Field Services Branch (FSB) program consultant. Al began his CDC career in February 1993 as a public health associate assigned to the New York City (NYC) Department of Health Bureau of TB Control. He was promoted twice and given increased responsibilities in the high-morbidity areas of Upper Manhattan and Brooklyn. In April 1997 he was promoted and transferred to the New Jersey Department of Health and Senior Services TB Program, where he served as the assistant to the senior public health advisor. While in New Jersey he assisted TB program officials by providing consultation and technical assistance in program planning, coordination, operations, training, administration, and evaluation. In January 1999, Al was again promoted on his selection as the assistant TIMS project manager in the Computer and Statistics Branch (CSB) in DTBE. In that position he provided technical assistance and training to TIMS users nationwide. He maintained appropriate and effective communication with DTBE staff who were directly or indirectly involved with TIMS. He worked closely with the Surveillance and Epidemiology Branch (SEB) regarding the interface of TB surveillance data, and with the FSB program consultants regarding resource needs and management problems. He reported to FSB on December 4, 2001.

Thomas R. Frieden, MD, MPH, formerly a medical epidemiologist with CDC, has been appointed Commissioner of the New York City (NYC) Department of Health. Tom served as an Epidemic Intelligence Service (EIS) Officer with CDC from 1990 to 1992. In 1992, he was hired as a Medical Officer, Field Services Branch, DTBE, and assigned to the New York City Department of Health where he was appointed Director of the Bureau of TB Control and Assistant Commissioner of Health. From 1992 to 1996 he successfully directed NYC's effort to control its multidrug-resistant TB epidemic. In 1996, in response to a request from the Global Tuberculosis Programme of the World Health Organization (WHO), Tom was assigned on temporary duty from DTBE to the WHO's Southeast Asia Regional Office in New Delhi to assist WHO in the implementation of improved TB control programs in the region. Tom's efforts focused on TB control in India, a country which has nearly one quarter of the world's TB burden. Since 1996, with support from Tom, India raised more than \$200 million in concessional loan and grant support from the World Bank and bilateral donors, and adapted and expanded its TB control program to cover more than 440 million people. Currently, the program places more than 1,300 TB patients on treatment every day. From 1996 to 2000, the program treated more than 500,000 TB patients, saving more than 80,000 lives. During his time in India, Tom was able to develop consensus and persuade others to move toward a unified vision of TB control. Using his epidemiological background and communication skills, he convinced local doctors to analyze their data and apply the data in making programmatic decisions. He appropriately focused on capacity-building and helped train about 40 Indian doctors using EIS-style methods. In 1996, when he arrived in

India, the country had limited laboratory services and training manuals; by the year 2000, high-quality laboratory services and equipment had been ensured, nearly 1 million copies of technical documents have been distributed to health workers, and modules are in place for training TB control officers and others. Local managers have also been recruited, trained, and supervised, enabling them to further support the program and build capacity at district and state levels. In addition to the programmatic challenges, Tom and his staff frequently met physically threatening situations along dangerous roads, such as the threat of guerilla assaults. Despite these obstacles and challenges, Tom successfully assisted India in developing a world-class TB control program that now covers over 40% of the nation.

Darryl Hardge joined the team of program consultants in the Field Services Branch of DTBE on January 13, 2002. Darryl came to work for CDC in May 1991 as a public health associate in the Division of Sexually Transmitted Diseases (STD) assigned to the Division's Disease Intervention Specialist (DIS) training center in Decatur, Georgia. In 1992 Darryl was reassigned to Milwaukee, Wisconsin, as a DIS working in high-morbidity areas. From January to February 1996, he had a temporary assignment in Baltimore, assisting the STD program with an outbreak. In 1996 Darryl became a lead worker supervising six other Disease Intervention Specialists. In October 1997, Darryl joined DTBE as the Assistant Program Manager for Louisiana's TB Program, under the supervision of Scott Jones, the senior PHA and administrator of the program. Darryl assisted in evaluating and resolving programmatic issues, and consulted with private/public organizations on the guidelines that pertain to TB infection and

disease. He assisted in the development of the annual cooperative agreement. He also managed the directly observed therapy (DOT) incentive program. In November 1998, when Scott was reassigned to DTBE headquarters as a program consultant, Darryl assumed a number of Scott's duties. During that time Darryl was again promoted. In May 1999, he was assigned to the Baltimore TB program as the program manager. He was responsible for all management decisions, and for collaborative activities with community leaders, area university schools of medicine, public/private service providers, and other key persons and agencies. During this assignment, Darryl lead the program through two large and difficult outbreaks. Recently, Darryl was on a temporary assignment in Washington, D.C., helping with CDC's effort to respond to the anthrax attacks.

Susan Lippold, MD, MPH, joined the DTBE Field Services Branch on January 2, 2002, and is the new Medical Director of the Chicago TB Program. Susan will have overall responsibility for the program, with key administrative, clinical, and programmatic management officials as direct reports. Susan comes to CDC from the Health Resources and Services Administration, where she worked as a project officer in the areas of homeless services and health care access and quality issues. She is a graduate of Williams College, attended the Uniformed Services University of the Health Sciences (medical school), has an MPH in epidemiology from Yale, and trained in general internal medicine at the University of Washington. Susan worked in Santa Fe, New Mexico, for two and a half years as a general internist in the Indian Health Service and at Cook County Hospital in Chicago. For the last 2 years she volunteered in the Englewood TB Clinic in Chicago and is

known to many of the staff serving Chicago's South Side. In addition to her excellent credentials, Susan brings to the position a strong background and interest in general internal medicine. She also brings experience living and working in a variety of cultures in and out of the United States, increasingly important assets as we address an increasing proportion of TB cases in foreign-born communities and attempt to increase treatment of latent TB infection in primary care settings.

Stan Akiyoshi Morita retired from CDC on January 3, 2002. Stan joined CDC and was assigned to Alameda, California, on January 24, 1971. In November 1972, he transferred to the San Francisco Sexually Transmitted Disease (STD) program and soon transferred with promotion to the Reno, Nevada, STD program. He then joined the Division of TB Control and was promoted again upon transfer to Brooklyn, New York, in September 1975. He stayed in DTBE until retirement, with assignments to New York City, with promotion, in September 1978; to Baltimore, Maryland, in December 1979; to Honolulu, Hawaii, in October 1983; and in February 1988, to the State of California in the city of Sacramento. Many low-morbidity areas experience staff turnover; Stan shared his wealth of programmatic experience with these areas and was instrumental in training new staff during times of transition. He took great pride in his legacy of teaching. Stan helped numerous areas develop new staff with the important skills necessary to conduct TB prevention and control. In California, Stan not only taught courses that were offered at the Francis Curry National TB Center in San Francisco, but at various other locations throughout the state. With the California "Local Assistance Branch," Stan worked on numerous TB outbreaks and helped guide a

number of special projects and initiatives through to completion. He consistently showed an outstanding ability to interact and establish a strong positive working relationship with his fellow workers as well as with other staff of local health jurisdictions, private and public health care providers, and the state health department. In the fall of 1999, Stan became the State TB Branch local jurisdiction liaison for the 41 low-morbidity health jurisdictions. He demonstrated his ability to collaborate with other entities during the implementation of the first Northern California Regional Corrections Work Group. Later, while working with the California TB Controller, Stan was very involved in developing innovative approaches to accomplish goals and objectives consistent with California's new Tuberculosis Indicators Project (TIP), within areas of low morbidity throughout the state. In this manner, the California TB Control Branch was able to unveil a plan to work with and address the needs of the whole state in a new and more efficient manner.

Dawn Tuckey was selected for a program consultant position at DTBE headquarters, reporting on January 13, 2002. Dawn started her CDC career in 1985 as a public health associate assigned to the North Carolina Sexually Transmitted Disease (STD) control program. She also held STD positions in Washington, D.C., and Philadelphia, Pennsylvania. Dawn joined DTBE in July 1990 assigned to New York City as the clinic manager for three city TB clinics. In 1993, she took a senior public health advisor position in Wisconsin, where she was the TB program director until 1997. Dawn was given the lead for developing, implementing, and evaluating initiatives and programs, and designing local health department infrastructure

changes to better respond to the new programs. She also took the lead in the development of the annual cooperative agreement. In 1997, she accepted a position in Washington, D.C., with the Division of Diabetes Translation where, as program manager, she directed programmatic, fiscal, and personnel activities targeted to reduce the burden of diabetes in the District. In 1999, Dawn rejoined DTBE in Philadelphia as the senior program advisor to the TB controller. Her duties included assessing programs, assisting local management officials in preparing and managing the program budget and cooperative agreement mechanism, and providing oversight and consultation on the use of local program staff.

CALENDAR OF EVENTS

May 6-9, 2002

**Case Management and Contact Investigation
San Francisco, California**

Francis J. Curry National TB Center

Contact: Training Coordinator

Tel: (415) 502-4600; fax: (415) 50204620

E-mail: tbcenter@nationaltbcenter.edu

May 17-22, 2002

ATS 2002

**American Thoracic Society 98th International
Conference**

Atlanta, Georgia

Contact: ATS, 1740 Broadway, New York, NY
10019

Tel: (212) 315-8780

E-mail: ats2002@thoracic.org

Web site: www.thoracic.org/ic/ic2002/index.asp

June 3-4, 2002

**TB Case Management for Nurses
Newark, New Jersey**

NJ Medical School National TB Center

Contact: Education and Training Dept.

Tel: (973) 972-0979

June 3-5, 2002

**The 4th World Congress on Tuberculosis
Washington, DC**

Cosponsored by NIH, WHO/TDR, and CDC

Detailed information about the meeting program
can be found on the meeting Web site

(<http://www.niaid.nih.gov/dmid/tuberculosis/tbcongress/>)

June 18-19, 2002

**2002 National TB Controllers Workshop
Alexandria, Virginia**

National TB Controllers Association (NTCA) and
CDC

NTCA contacts: Walt Page or Linda Smith (770)
455-0801

CDC/DTBE contact: Sherry Hussain: (404) 639-
8989

Web site for information:

<http://sec.cdcmeetings.com/tb>
